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The Gladiolus Thrips
IN THE FIELD
AND
STORAGE HOUSE



Franklin 1900-
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CONTROL OF THE GLADIOLUS THRIPS IN THE FIELD AND STORAGE HOUSE

By Floyd F. Smith, Sr. Entomologist

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The gladiolus thrips, *Taeniothrips simplex* (Mor.), continue to be the most serious and the most widespread insect pest of gladiolus. Most gladiolus growers are familiar with the brown corky areas on corms in storage as well as the silvering of foliage and the streaking and deforming of flowers that are caused by the feeding of thrips. The insect not only breeds on its favorite host, the gladiolus, but also on several other plants including poker plant (*Kniphofia*), iris, and carnation. The gladiolus thrips do not live out of doors through the winter on any of these plants in the colder parts of the country. The thrips do survive and breed on gladiolus corms in storage at temperatures above 50 degrees F., and on its various host plants such as carnations that are growing in greenhouses.

To avoid the most important sources of infestation on the growing crop the stored gladiolus corms should be treated to destroy the thrips, preferably early in the storage season before they have seriously injured the corms. If possible the corms should not be planted near greenhouses where the thrips may have been breeding and may fly to the gladiolus after growth appears. A further source of infestation is the thrips transported in flowers from other areas. This is especially common in plantings near cemeteries where floral pieces are left to dry. The thrips are known to fly at least a half mile from heavily infested gladiolus plantings and favorable winds may carry them even greater distances. With these several possible sources of infestation it behooves the gladiolus grower to apply an insecticide to his growing crop as an insurance measure unless past experience has shown that his planting is sufficiently isolated to escape attack by thrips.

Control On The Growing Crop

Until the advent of DDT the standard remedy for control of the thrips on gladiolus has been the weekly applications of tartar emetic and sugar in water. Most gladiolus growers are familiar with this spray combination which is discussed in Farmers' Bulletin 1860, available from the U. S. Department of Agriculture, Washington 25, D. C.

Recently DDT preparations have proved to be extremely effective against the gladiolus thrips and will doubtless replace the older remedies as a standard for control. The advantage of DDT is that it may be applied as a spray or as a dust. The materials can be procured ready for use and require no additional

sweetening agents or wetting agents. Insecticides containing DDT for use on plants are available in three general types: (1) powders to apply as a dust; (2) wettable powders or powders that will mix readily with water for spraying; and (3) emulsions to be diluted with water and applied as a spray. Since the pure or technical grade of DDT is unsuitable for use in sprays or dusts the growers should purchase a blended product prepared especially for the purpose. For the sprays a wettable powder containing 50 per cent DDT or a liquid emulsion containing approximately 25 per cent DDT is suitable. The wettable powder and the emulsion should indicate on the package that they are suitable as plant sprays. Some preparations of DDT are intended as fly sprays in buildings and might be injurious if used on plants. The quantities of DDT preparations for small and large lots of spray are as follows:

Wettable powder (50 per cent DDT)	3 tablespoonfuls	$\frac{1}{2}$ cup	2 pounds
Emulsion (25 per cent DDT)	2 teaspoonfuls	2 tablespoonfuls	1 quart
Water	1 gallon	3 gallons	100 gallons

Dust preparations containing 5 per cent DDT are also being widely used against the gladiolus thrips.

In experiments at Beltsville, Maryland, during the 1946 season 6 weekly applications were made to the foliage prior to flowering. Both sprays and dusts reduced the thrips more efficiently than did the tartar emetic sprays. However, after about two weeks the thrips began to reappear and to injure the flowers in plots treated with the dust or the wettable powder sprays, whereas, no injured flowers appeared in plots treated with the emulsions until after four weeks when practically all the flowers had been cut. It appeared that the DDT emulsion sprays had a longer residual effect than did the dusts or wettable powder sprays. While the emulsion spray appeared to be more effective than the dusts in our experiments many growers may prefer to apply the DDT dust because of the greater convenience.

Some growers continue spraying after the flowers open. To avoid staining of petals the flowers should be cut just before each application of wettable powder spray or dust. The emulsions used in our tests may be applied to the flowers without staining or injury.

Control Of Thrips On Stored Corms

Several methods of destroying thrips on stored corms have been recommended. The most desirable treatment not only destroys the thrips present at the time but protects the corms from thrips coming from untreated corms later

in the storage season. Naphthalene flakes, widely used for several years, volatilize slowly and the fumes are toxic to the thrips for several weeks or longer. DDT will also remain toxic to the thrips over a long period. If such fumigants as cyanide or methyl bromide are used, however, the corms must be protected from reinfestation after treatment. The various corm treatments except DDT are discussed in Farmers' Bulletin 1860.

Applications of dusts containing from 1 per cent to 10 per cent DDT to stored corms have been reported by M. D. Farrar to be completely effective against the gladiolus thrips (The Gladiolus Magazine, Vol. 9, pp. 10-11, December, 1945). Because of its general availability it is suggested that the 5 per cent DDT dust be used. One ounce (3 to 4 tablespoonfuls) of the DDT dust is applied to 1 bushel of corms. Corms in bags may be treated by adding 1 teaspoonful of the dust to 100 corms and shaking to give uniform coverage. The treatment should be made early in the storage period to kill the thrips before they become thoroughly established beneath the scales. The dust may be applied before or after cleaning and left on all winter. The DDT treatment is particularly suitable for the average gardener with small lots of corms. While experiments have not been conducted in large storage houses, practical control should be obtained by dusting over the trays before the corms are cleaned and repeating the application as the cleaned corms are returned to the trays.

What the gladiolus grower should do:

1. Treat the corms in storage with 5 per cent DDT dust.
2. Treat the field infestation with a DDT emulsion spray for best results or with a 5 per cent DDT dust for somewhat less effective control. Make the first application when the plants are about 8 to 10 inches high and repeat at weekly intervals until flowers show color. In mixed plantings where the flowering period is extended it is advisable to make additional applications.

